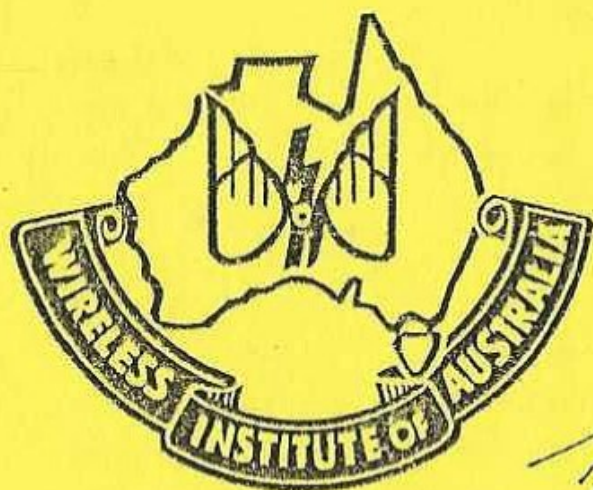
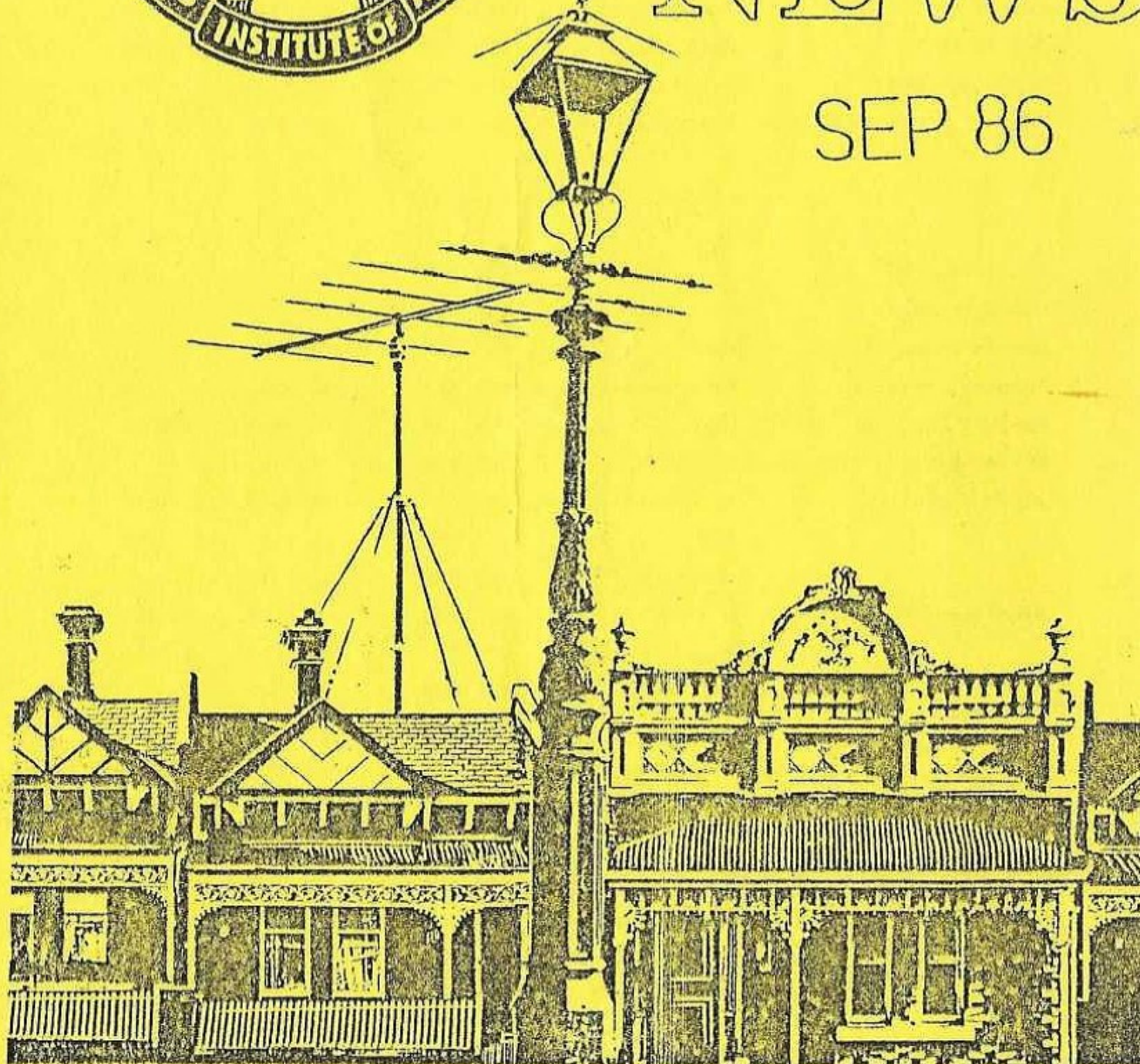


86/09 01



B·A·R·G NEWS

SEP 86



● Monthly Newsletter of the
Ballarat Amateur Radio Group

86/09

02

Executive Committee

			<u>Home</u>	<u>Business</u>
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Vice President	Lou Iaquinto	VK3 DFI	49 2200	
<u>Secretary</u>	<u>Jim Wright</u>	<u>VK3 CFB</u>	<u>32 7563</u>	
Assistant Secretary	Dick Forrester	VK3 VU	35 7663	39 1001
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Net Co-ordinator	Fred Quick	VK3 KOF	32 3216	32 6455
Technical Officer	Ian Robinson	VK3 BTX	32 4139	
Member's Representative	Neil Davidson	VK3 KQQ	35 9612	

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Awards Manager	Maurie Batt	VK3 XEX	42 2245	
Property Officer	Dick Antoziewicz	VK3 AEX	32 3273	31 1818
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WICEN Committee	Dick Antoziewicz	VK3 AEX	32 3273	31 1818
	Dick Forrester	VK3 VU	35 7663	39 1001
	Geoff Smith	VK3 ADB	33 2112	
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	Dick Forrester	VK3 VU	35 7663	39 1001
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	Henry Moritz	VK3 DXC	35 5130	
	Maggi Iaquinto	VK3 CFI	49 2200	
Technical Committee	Ian Robinson	VK3 BTX	32 4139	
	Phil Seddon	VK3 AQM	31 5220	31 3166
	Maurie Batt	VK3 XEX	42 2245	
	Dick Antoziewicz	VK3 AEX	32 3273	31 1818

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B.A.R.G. meets on the LAST FRIDAY of every month at the Ballarat Education Centre, Hopetoun Street, Ballarat at 7.30 pm.

Committee meetings are held at the Education Centre on the Wednesday two weeks prior to the Club meeting, at 7.30 pm. Members of the Executive are expected to attend and any Club Member with business for discussion is welcome.

All correspondence should be addressed to -
The Secretary, B.A.R.G. Inc., PO BOX 216E, BALLARAT EAST. 3350.

Applications for Awards to Maurie Batt, RSD ROKEWOOD JUNCTION. 3351.

MINUTES OF GENERAL MEETING HELD 29th AUGUST 1986.

MEETING OPENED at 7.40pm by President Bob BNC with 40 members and visitors in attendance.

MINUTES of previous meeting as printed in newsletter were confirmed, CFH/AEX.

INWARD CORRESPONDENCE Request for information from SWL Nervyn Lloyd.

OUTWARD CORRESPONDENCE Doug McLeod confirming his visit to club meeting.

TREASURERS REPORT General a/c \$205.55. VS&L a/c \$1712.10. DS/KQF.
Accounts passed for payment; Newsletter printing \$37.95
B.E.S. repeater parts \$37.53. Newsletter postage \$13.46.

QSL MANAGER Cliff did not receive any cards in August, he also requested that members sort their cards into countries and call areas to make his job a little easier, also please write legibly.

AWARDS MANAGER Maurie sent out 3 awards for the month.

EDUCATION OFFICER has arranged an inspection of the ore carrier Lindsay Clarke when it is next in port in Geelong, further details when date is known. Ian also undertook to supply information requested by Mr. Lloyd and the Club donated a call book to be included with this.
Ian also suggested that members might try their hands at building small and inexpensive projects. A show of hands accepted this idea and Ian is going to come up with a circuit for a field strength meter.
Having given all the good news Ian then told us that licence fees are going up \$3.00.

GENERAL BUSINESS

Albert ZZX reported on a proposed joint dinner with Geelong ARC at Meredith. Further details in newsletter.

George DS reported that he was receiving interference right across the radio spectrum from a paging or selective device.

Bob BNC welcomed Bud NFZ back to the Club after his spell in hospital and asked Murray AAI to convey the best wishes of the members for a speedy recovery to Carron.

Happy Birthday wishes were given to Maurie XEX on his 75th Birthday and thanks to Maurie and Marge for cake and sandwiches for the Birthday Party.

DOUG McLEOD then gave a most interesting talk and demonstration on Mobile Antennas, and the meeting closed very late.

73s Jim CFB.

Next Committee Meeting, Education Centre 15th October. 7.30pm.

Next Club Meeting, Education Centre 26th September, 7.30pm.

DON'T FORGET THE VISIT TO ANSETT ON SATURDAY 27th SEPTEMBER.

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LADIES CO MEETING

The Casserole Evening was a success. Some 25 people enjoyed a great meal of a variety of casseroles and sweets. We wish to thank all the people that participated. A special thankyou to Fred and Dickie for opening their home to us.

The next Ladies meeting will be on the 9th October, 1986.
At Gwen Davidson's 10 Rowland St., Sebastopol. 8 p.m.

AGENDA

NEW EXECUTIVE MEMBERS

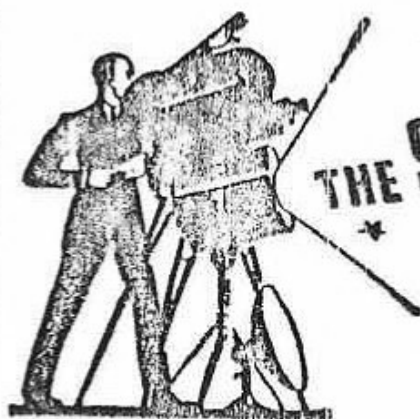
CONVENTION

CHRISTMAS DINNER

CHRISTMAS TREE.

Anyone with a interest in the above issues please attend our next meeting.

J.F. Secretary.



THE SPOTLIGHT IS ON!

Venture Video

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86/09 05 5

PRESIDENT'S COMMENT

It's a pleasure to start this months notes with a congratulations to our new licencees and upgrades. Cliff (APC) is now CCB, Leon (NLR) is now KIT and as a result of the clubs novice course, the following people were successful. Barbara VK3PUJ, Ian VK3PUI and Des VK3PUH. We hope that you will enjoy the fellowship of the worldwide "Ham" fraternity and in turn put back into your hobby what you get out of it. Might I also say at this point, that behind each one of these people were many helping hands and without this help the task of qualifying would have been a great deal harder. To these people, we say thankyou.

It is a constant concern to me the problems that any new amateur faces in getting on the air. Gone are the days of getting on the air with a few bits and pieces "wogged" from an old T.V., or pieces of disposal gear. If amateur radio is to survive, then perhaps we need to collectively address these problems.

Our next meeting will see some D/F (directional finding) equipment displayed and discussed. I hope that this will entice some of our members to "have a go" and get equiped for the convention weekend. Fox hunting and "sniffer" hunting is fun and the equipment can be made quite simply. Details of all equipment displayed will be available to have a think about.

The trip to the "Lindesay Clark" bulk carrier was a great success and we hope to have another trip in the new year, so if you missed out be in early for the next trip. (I hope the D/F equipment was observed.) I would like to express our appreciation to Alcoa and also to Ian AXH who organised the staff on the Lindesay Clark.

Names for the Ansett flight simulator centre bus trip should be passed on to the secretary as soon as possible. The bus will leave on Saturday 27th September at 2pm.

Thanks to Doug McLeod for a very instructive address on mobile antennas. It's a pleasure to listen to such down to earth discussion.

I would like to remind members that the scouts JOTA weekend is on 18th & 19th October. We will want assistance to put up equipment and also provide operators to demonstrate amateur radio to the scouts. This is a good P.R. opportunity for our club and the prospect of getting new members into our ranks.

Well thought for this month, "A little inaccuracy sometimes saves tons of explanations".

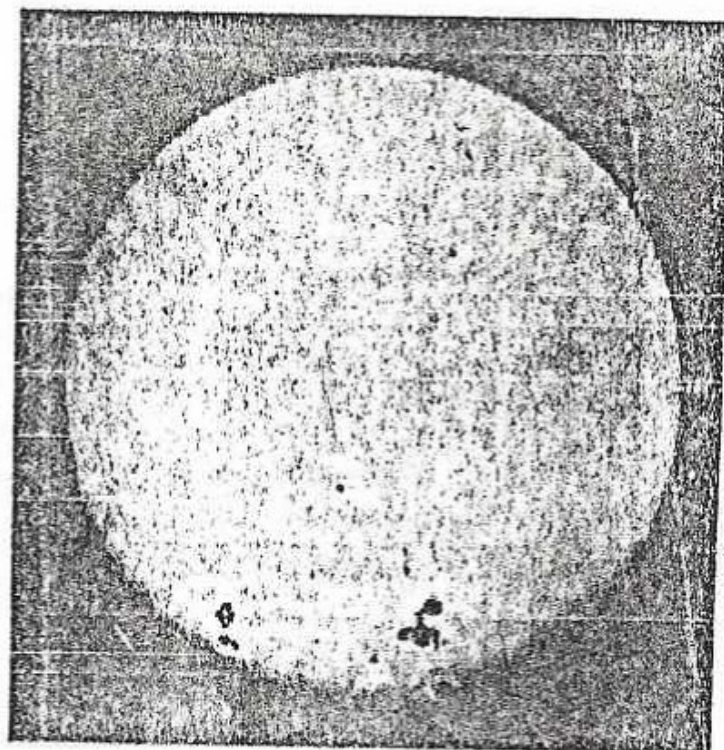
73's

Bob VK3BNC

Spots Before Your Eyes

Where are we in the sunspot cycle? Will HF propagation conditions get worse before they get better?

By Jerry Hall, K1TD
Associate Technical Editor, ARRL



On 75 meters not long ago, I overheard a brief discussion about the present condition of our high frequency (HF) amateur bands. One of the fellows, obviously a relative newcomer to Amateur Radio, was lamenting that his radio might as well not have 10- and 15-meter bandswitch positions. There were never any good signals on those bands, he complained. The second fellow then explained that propagation conditions on those bands go from good to bad and back to good, in 11-year cycles. The conditions follow the 11-year sunspot cycle, he was saying. The first fellow then asked the obvious question, "When will conditions get good again?" The answer he received was, "Sometime in the 1990s." He replied, "Not 'till then, huh?" and changed the topic of conversation.

It is true that radio propagation via the ionosphere is related to solar activity. And since telescope observations were begun in 1750, our traditional measure of solar activity has been based on a count of sunspots. Over these 236 years, we have learned that the average number of spots does go up and down in a cycle very roughly approximating a sine wave. The duration of a period in this cycle varies from 7.3 to 17.1 years, but averages approximately 10.7 years—the reason we tend to refer to the "11-year" cycle. The shaded portion of Fig 1 is a plot of the yearly averages of sunspot numbers in the 20th Century.

We have also learned that during years of high sunspot activity, the ionosphere becomes more intensely ionized during daylight hours. This lets us make use of

radio frequencies in the upper end of the HF spectrum. Twenty meters is open to somewhere 24 hours a day. The 15-meter band is open from before sunrise to after sunset, and sometimes remains open throughout the night. The 10-meter band opens almost every day, just like clockwork, and usually remains open until well after sunset. During the day on 10 meters, it is relatively easy to work someone thousands of miles away with only 5 or 10 watts of transmitter power and a simple antenna—that is, if you can find a frequency free of QRM! And, on occasion, during periods of high sunspot numbers, there may be 6-meter ionospheric openings, making communication possible over distances in excess of 2000 miles at 50 MHz. Indeed, these are exciting times for working the world.

By contrast, in periods of low sunspot numbers, you'll have to move your bandswitch down in frequency by at least one band position to find conditions similar to those of high solar activity. But even the best of conditions during solar minima are seldom as good as propagation during peak years. The 20-meter band *doesn't* usually stay open all night. Openings on 15 meters occur occasionally, while 10-meter openings are rare, very rare. Signals that do propagate over long distances in the upper HF bands are usually none too strong and are accompanied with noise conditions discouraging to the casual DXer. "Pileup-tracking" generally requires high power and a good antenna. Periods like these sometimes make you wonder if your equipment or your antenna is working as it should. You may

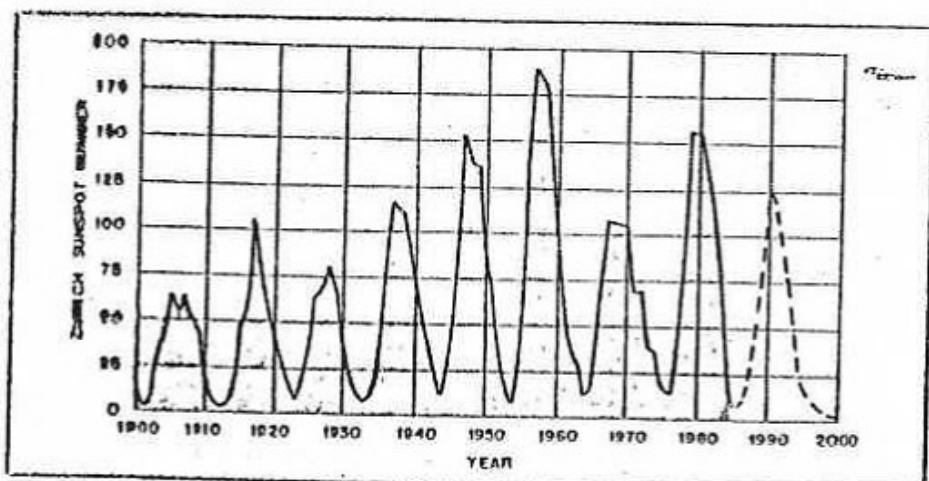


Fig 1—Sunspot numbers during the 20th Century. The shaded curve shows yearly averages, while the broken curve shows where we could be going for the coming Cycle 22.

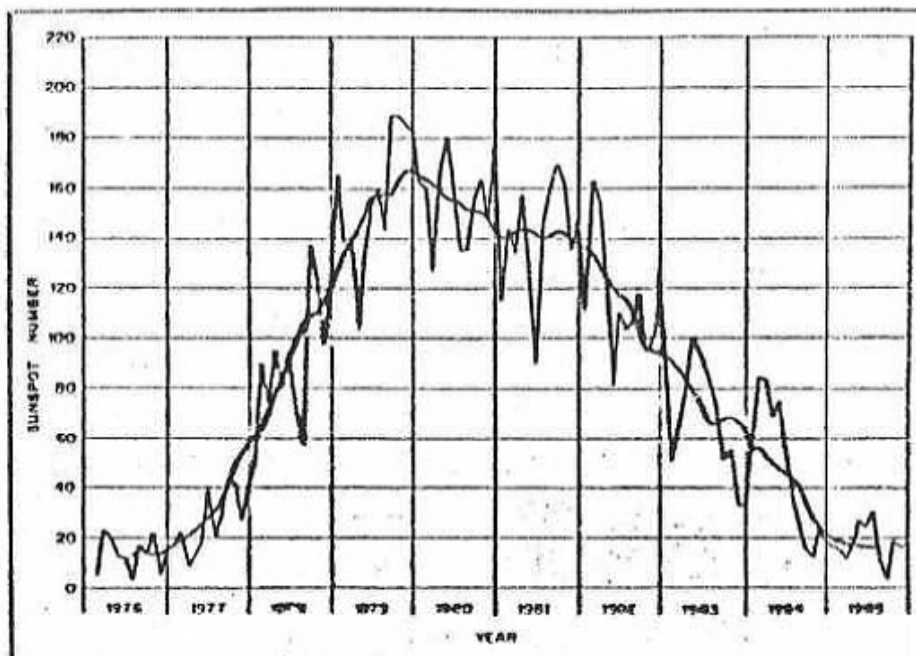


Fig 2.—Detail of Cycle 21. The **thick** line is a plot of 12-month running averages, while the **thin** line is a plot of monthly averages.

even consider dropping ham radio and taking up stamp collecting. But take heart; things will certainly get better!

Where Are We Going?

I probably don't need to tell you that right now, in mid-1986, we are in a period of low sunspot activity. A look at Fig 1 confirms this statement. The year 1986 and early 1987 are in the low-activity period between Cycle 21 and Cycle 22.¹ Where will we go from here? Well, as the gent on 75 meters mentioned, we'll probably be enjoying the next peak in solar activity in the 1990s, perhaps as early as the year 1990. The broken line in Fig 1 shows where we could be headed. If Old Sol follows his typical pattern, we should begin to see an increase in average sunspot numbers about mid-1987, with a peak in late 1990 or early 1991. But we have no precise method of predicting solar activity far in advance. The peak may arrive several months sooner, or two or three years later, than this estimate. How high will the peak be? I can't say—I don't have access to a crystal ball!

Does this mean that we may as well fold up our HF stations until mid-1987 because of the lull in sunspot activity? No. *Emphatically* no! Let's examine the pattern of sunspot numbers a bit more closely. In Fig 2, the bold line gives us a magnified look at Cycle 21, the cycle presently drawing to a close. This is a plot of 12-month running-average data. In other words, the smoothed sunspot number for a given month is an average of data for 6 months each side of the month under consideration.

Most often, plots we see of sunspot numbers are averaged data. Smoothed

numbers make it easier to observe trends and see patterns, but sometimes such data may mislead us. We tend to infer that solar activity varies smoothly—that, for instance, at the onset of a new cycle, the activity just gradually increases. Not so! If you have the equipment to observe sunspots visually, you know that there can be drastic changes from week to week and from month to month. Other methods of observation, such as measurement of the solar flux, indicate that there may be drastic changes over a period of just a few hours.²

To illustrate this point, I've added a plot of monthly sunspot-number averages to Fig 2 (the thin line). Each plot point represents an average of data for one month. Just look at all those month-to-month excursions above and below the bold line! Records show the *smoothed* sunspot maximum for Cycle 21 to be in December 1979, with a value of 164.5. But take a look at Fig 2. For three months in succession, the average each month was much higher than 164.5—above 182 for October, November and December 1979. On some days of these months, the activity level exceeded the equivalent sunspot number of 200. May and December 1980 also exceeded the smoothed maximum, as did September 1981—21 months after the smoothed peak had passed. So, you see, the averaged curve doesn't tell the whole story.

Fig 2 shows similar excursions—perhaps not quite so drastic—during periods of low solar activity. So, while it may be true that the next peak of activity won't occur until the 1990s, keep your HF station ready to go. Quite possibly, sudden brief openings will occur on 10 meters in 1986 and 1987.

Or 15 meters may really come alive for several days in succession, out of the blue. Yes, this *can* happen while we're waiting out this period of "no sunspot activity."

Notes

¹T. J. Cohen and P. R. Lintz, "The Sunspot Cycle, Analysis and Prediction," *CO*, Mar 1974, pp 24-28.

²The WARC bands are excluded in this broad statement.

³A sunspot cycle is the interval from one period of low activity to the next. Cycle 1, the first complete cycle to be observed, began in 1755.

⁴See E. P. Tilton, "Prolegomena—Past and Prospects," *QST*, Aug 1979, pp 24-27. **ENR**

FROM THE HORSHAM PAPER.
COURTESY CUFF VK3CCB

\$500 fine: No CB licence

A Warracknabeal machinery firm manager received a \$500 fine in Horsham court on Wednesday for failing to have his CB radio licensed.

Wimmera magistrate Mr Ron DeGruchy fined managing director of Ryan Scaravators Pty Ltd, Henry Highway, Warracknabeal, Austin Timothy Ryan, 41, for having possessed a radio communications transmitter without a licence.

Mr William Earles of the Department of Communications, Bendigo, told court the maximum penalty which could be imposed was a \$2000 fine.

Mr Earles said Ryan had no permit or licence for his radio.

He said the department had warned him he needed a licence.

Ryan, who did not appear in court, claimed he was unaware he needed one. He said he used the radio within a 32-kilometre, 20-mile, radius for personal use on his farm and during harvest.

In sentencing, Mr DeGruchy said Ryan had had ample opportunities to obtain a licence and hadn't bothered. He could not plead ignorance.

Mr DeGruchy ordered Ryan to pay \$70 costs and ordered forfeiture of the radio, valued about \$400.

DO YOU QSL, THEN READ ON.

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There have been some changes in the method of qsl'ing through the WIA buro, and at this stage I'm not sure as to what they all are, but if you are not a member of the WIA you will be charged at a rate of 40 cents per card. And if the club sends cards of members to the buro, and they find cards that belong to non members, the club will be charged for the cards at a rate of 40 cents each.

So would all please note

When you pass cards on to me, make sure that you have your WIA mailing sticker with them, as if you don't, I will not be able to except them.

As more news filters through, as to what the situation is, I will pass it on to you.

Cliff VK3CCB.

Historical Development of Radio

Some aspects of the how, why, when and where and by whom.

The fact that there is an historical item on early radio in the July edition of A R has nothing to do with my motivation to start this segment _____.

I have been a bower bird when it comes to old radios and bits of in the past, but having disposed of most of it caring parties, I still retain one prize possession in the form of a book the Name of which is, THE TEXT BOOK OF WIRELESS TELEGRAPHY by Rupert Stanley. This Volume 1 is the only one I have been able find, and from it we are going to extract some history in serial form, trusting that all our members (and others) will find the series both interesting and enlightening.

About the author _ well; let his credentials speak for him.

RUPERT STANLEY, B.A., M.I.E.E.

Chevalier of the Legion of Honour. Fellow of The Institute of Radio Engineers. Professor of Physics & Electrical Eng, Municipal Technical Institute, Belfast. Extra Mural Professor of Electrical Engineering, Queens Uni, Belfast. Major - Royal Engineers, and Chief Wireless Instructor B.E.F. France.

Note. First Edition 1914. This Ed. 1919.

CHAPTER X

HISTORICAL DEVELOPMENT OF RADIO-TELEGRAPHY

IN the last chapter we have seen that part of the energy initially stored up in a condenser was transformed into ether strain energy when an oscillatory discharge took place. Two strain effects are set up and act harmonically in the surrounding ether, the resultant is a wave of strain energy which spreads outwards through the ether in all directions, representing energy radiated from the oscillating discharge. Comparatively little energy is thus radiated from a closed oscillatory circuit such as that dealt with in the last chapter; if more energy can be transformed or radiated in these wave strain effects the presence of such waves in the ether will be detected at great distances from their source.

The development of radio-telegraphy, from the fundamental fact that under certain circumstances an electric discharge will oscillate at a high frequency, may best be explained by treating it in a historical manner. In order that the student shall not be wearied by dates, and by details of experimental methods which are now obsolete, only important steps in the development will be mentioned, and only those experiments described which bear directly on the development.

As already pointed out **Prof. Henry** in 1838 (and later **Feddersen** in 1857) discovered that under suitable circumstances the discharge of a Leyden jar, or condenser, would be oscillatory, and would oscillate at high frequency. **Kelvin** (1853) proved the laws under which these oscillations took place; showed that the time of oscillation depended on $\sqrt{LK}$, and that the effect of resistance was to damp the oscillations. The conception of electric and magnetic strains in the ether was due to **Faraday**; but **Faraday**, whilst a brilliant experimentalist, was not a mathematician and thus did not foresee the far-reaching results of some of his experiments. **Faraday** died in 1867.

In 1863 **Clerk Maxwell**, by mathematical reasoning, formulated

HISTORICAL DEVELOPMENT OF RADIO-TELEGRAPHY

the theory that light and radiant heat were electro-magnetic phenomena, caused by strains set up in the all-pervading medium, similar to the electric lines and magnetic lines which we have already discussed. He said that electro-magnetic disturbances travelled in the ether at a definite velocity, that is to say the known velocity of light and radiant heat—186,000 miles, or 300,000 kilometres, per second. Clerk Maxwell was a mathematician, not an experimentalist, and his theories lacked experimental proof for 24 years.

However in 1887 **Heinrich Hertz**, a young German Professor, issued the results of his experiments, which proved conclusively the correctness of Maxwell's theory. Hertz had set up electro-magnetic wave disturbances in the ether, had detected them, had proved that they possessed all the properties of light and radiant heat. They could be reflected, refracted, and polarised, and their velocity was 300,000 kilometres per second.

It will be remembered that when an electrical discharge takes place in an oscillatory circuit a portion of the oscillating energy is communicated to the surrounding ether in the form of electric and magnetic strains, producing in it a wave motion. With a closed oscillatory circuit the energy thus conveyed to the ether is a very small portion of that oscillated, and before the experiments of Hertz no method of detecting the ether energy was known.

Hertz increased the relative amount of radiated energy by arranging the capacity effect in the circuit, with plates or spheres separated widely from each other on each side of the spark gap; in other words he opened out the condenser. Of course the capacity of such an arrangement was not so great as when the plates were close together, but by making the plates large enough it was sufficient for the purpose.

Thus the arrangement of circuit made by Hertz was the first *open type of oscillator*. It consisted of a spark gap on each side of which were copper rods, 30 cms. long, terminating in large square brass plates of 40 cms. side, or round discs of copper, brass, or zinc. Such a Hertzian oscillator is shown in Fig. 57. Each side of the spark gap is joined to the high potential terminals of an induction coil, by which the oscillator is charged; the plates provide a suitable amount of capacity effect in the circuit; inductance effect is present in every circuit, even with straight wires. Using a suitable length of spark gap the discharge of this Hertzian open circuit is oscillatory. When the capacity plates are close together the greatest ether strain, on charge, occurs between the plates;

TEXT-BOOK ON WIRELESS TELEGRAPHY

when they are separated far apart on each side of the circuit, it follows that the volume of strained ether is increased, and the electric lines of force are longer since they stretch from plate to plate.

Hertz detected the presence of other disturbances, or other energy, in the space around his apparatus by using what he called a "resonator," corresponding to a receiver in radio-telegraphy. It simply consisted of a stout copper wire circle, of about 35 cms. radius, with a very small spark gap in the circle. When he held this circle parallel to his oscillator, in such a way that the small spark gap was turned towards it, he obtained minute sparks across the resonator gap.

By placing his oscillator, (made smaller for the purpose), and his resonator in parabolic mirrors he proved that the ether waves set up by the oscillatory discharge could be reflected, refracted, polarised, and had, in fact, all the properties of light and radiant

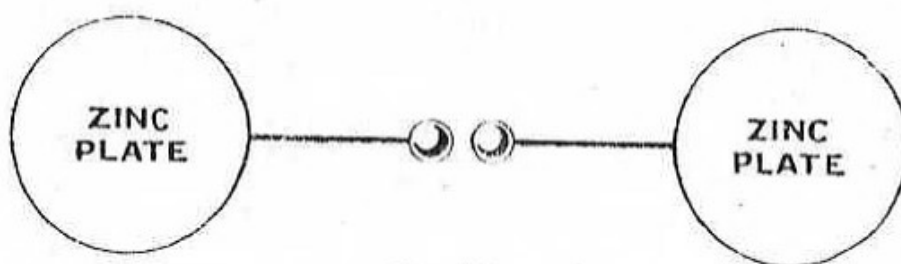


FIG. 57.

heat. He reflected the waves from a large conducting surface, and by the interference of the advancing and reflected waves set up stationary waves. This is analogous to the apparently stationary waves which can be set up in a stretched string when it is bowed anywhere along its length; the string will be seen to vibrate in loops, and points along it, called *nodes*, appear to be at rest. The distance between two consecutive nodes is half the wave length of vibration of the string.

Hertz, experimenting with the stationary waves, measured the distance between two consecutive nodes, or between two consecutive *antinodes*, which are points of maximum disturbances. He thus measured the wave length. Knowing the frequency of the oscillations he calculated the velocity with which these ether waves travelled, for $\text{velocity} = \text{frequency} \times \text{wave length}$ ($v = n \cdot \lambda$); no matter what frequency or wave length was used he found the velocity to be 300,000 kilometres, or 3×10^8 metres, per second.

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The experiments of Hertz proved the accuracy of Clerk Maxwell's theories, set at rest all doubts as to the existence of an all-pervading invisible medium, and opened up a new and delightful field of scientific investigation.

It may be here remarked that the Maxwell theory of the nature of light does not satisfactorily explain all the phenomena connected with it; thus photo-electric effects cannot be satisfactorily explained on this hypothesis alone.

Ether waves similar to light waves had thus been set up by electric means and many scientists devoted themselves to a study of these new waves. The shortest ether waves set up by Hertz's small oscillator were about 60 cms. long, while the longest light wave is about $\frac{8}{10^6}$ cm. long, and the longest radiant heat wave measured is only 0.0025 cm. It is interesting to note that the scientists who first followed Hertz devoted their efforts to the construction of apparatus which would set up and detect waves shorter than his, hoping to produce and detect ether waves more nearly approaching in length those already known in the form of heat and light. Following this idea Professor Chundar Bose, by a development of apparatus, produced and detected ether waves 0.6 cm. long.

Thus, as far as radio-telegraphy was concerned, the progress at first was all in the wrong direction; we realise now that the longer the waves the greater the distance at which they can be received.

A READER WRITES...

Dear Ron,

Here are a few items I would like to know more about. Any chance someone will put pen to paper?

*right hand polarisation

*left hand polarisation

*Doppler shift

*why do satellite transponders use circular polarisation

*What is a bobtail antenna

*Why is a bobtail so popular for Field Day

Perhaps one of the Group technical gurus can answer.

WHO'S WHO IN THE CLUB

A personal history item. Member by member,
and month by month.

To start with - your club secretary, JIM CFB.

"Jim! How long have you been, and what influenced you to become - a Ham?". "Since 1982 John, I retired in 1981, and because I had literally gone to pieces, I was looking for a new hobby. You see I used to shoot and fish but its a bit difficult with Arthritis, and as I used to have a radio business in MAYFAIR, this was my way back.

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I started this occupation full time back in 1943 after I quit the B.B.C. fire service, so you see I did have an interest in radio and when I saw an ad. re radio training at North Tech, I contacted JIM ANH; who was taking the class, and consequently enrolled, completed the course and got my novice first time around. If I had not it is doubtful that I would have persisted. I'm a fairly new HAM, not much history here, but if you want an interest story - then my wife and I were the first people to attempt journeying by motor cycle from England to Australia."

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"You actually tried to ride a motor cycle all that distance?". Yes! we only got as far as the Middle East, and there is an interesting story there - if you want to hear it".

"Well, I'd love to hear it Jim and I'm sure the members would". Now, if you; the reader would like to hear Jim's story, we have it on tape.

About Jim coming into Amateur Radio - Obviously he was distraught doing nothing, and filling in his time reading, (8 books a week) and in Jim's own words "I'd have gone balmy, or been dead in a couple of years if I hadn't taken this on". "Then you must have been given a lead to take it on". "No! I think it was because I was in Signals in the Army - I was not in for long as I was Blown up. I was called up into the Territorials (C.M.F.) in 1939 and blown up in 1941, and after a long convalescence in hospital, I was discharged from the army. I joined the B.B.C. Fire Service (Yes! they had their own) and since the blitz was still on, this gave me the excitement that I needed. It was while I was in this service that I began building little one valve receivers & transmitters, and then went one better by getting a part time job in a radio shop, doing repairs. It was through this occupation that I met a chap who encouraged me into starting my own business, by volunteering to help form a Ltd. Co. Hence my entry into the Radio retail business".

Once again - an interesting story, but one that would take up a lot of space.

If you were to ask Jim if he has a preference for any particular aspect of Ham radio, he will tell you "No! I just like to natter," but the interview showed that he likes listening to CW - but can't participate because of physical disabilities - realising of course that Jim was in Army Signals, I wonder if we have a "Big Brother" listening on CW.?

I asked him if he thought High Tech. has had an adverse effect on Amateur Radio. "No! I don't think so - I remember back in England

during the war when I used to break the laws on communications many times ----". Another story, and as I said earlier. It's on tape!

Concluding the CFB story. To those who don't already know - Jim joined the B.A.R.G. in 1981 - before he got his Ham License, and has been Secretary for three years out of his five years as a member. "The members were so good to me. Helping me get started, erecting my antenna's etc - I feel I owe them something!".

Thank you for your story Jim!

John KJB.



CW OPERATORS QRP CLUB

WCM-HCM AWARD



The WCM/HCM AWARD (Worked Club Members / Heard Club Members) is offered by the CW Operators QRP Club, to all Amateurs and Short Wave Listeners, who fulfil the following requirements.

To qualify for the Award, Australian Amateurs and Short Wave Listeners must Work/Hear 10 QRP Stations that are members of the CW Operators QRP Club, gaining 10 points (1 point for each station worked). Overseas Amateurs and Short Wave Listeners must Work/Hear 5 QRP Stations that are members of the CW Operators QRP Club, gaining 5 points (1 point for each station worked/heard). Working/Hearing the Club Station (VK5WAT/QRP call sign has been applied for), counts 3 points. Additional Stickers can be obtained by Working/Hearing 30 (30 points) and 50 (50 points) QRP Stations, that are Members of the CW Operators QRP Club.

All frequencies allocated to the Amateur Service may be used. The mode used must be two-way CW. (Phone to CW is not valid).

All Club stations Worked/Heard must be different call signs, (i.e. VK2ABC/QRP can only be Worked/heard on one band.)

The station being Worked/Heard must be using the QRP suffix, and using not more than 5 watts output to the antenna.

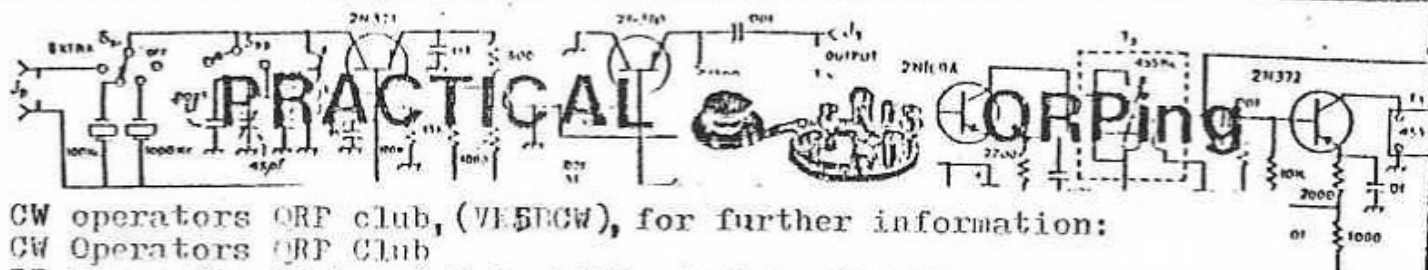
Club Members wishing to qualify for the award, must work other Club Members.

All contacts for this Award must be made after 1-8-86.

Send a certified copy of the logged contacts, with a fee of \$A2 for Australian Amateurs and Short Wave Listeners. For Overseas Amateurs and Short Wave Listeners a fee of \$A3 is required.

Applications for the Award to be made to.....

Awards/Contests Manager,
CW Operators QRP Club,
Len O'Donnell VK5ZF/QRP,
33 Lucas Street,
Richmond,
S.A. 5033,
Australia.



CW operators ORF club, (VE5BCW), for further information:

CW Operators ORF Club

33 Lucas St; Richmond S.A. 5033. Or Herv VK3ADX on the BARG net.

YOUR FIRST QRP RIG

GET INTO "HOME BREWING" WITH THE
"DONNYBROOK SPECIAL"

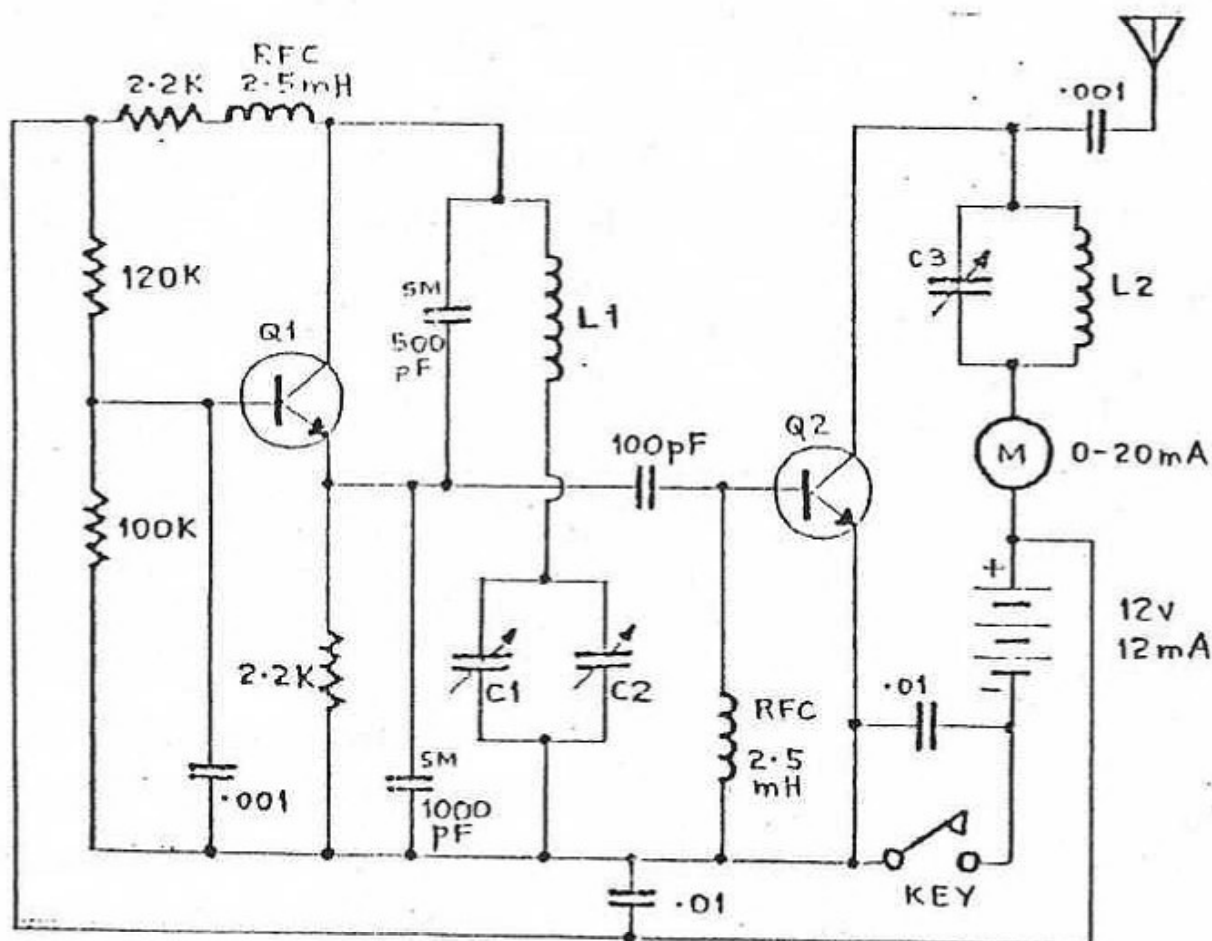


VR6YW

2 TRANSISTOR QRP RIG



100 MW — 3.5 MHz — VFO



QRPp CW VFO Tx FOR 80M

- C1 15pF BANDSPREAD (small trimmer)
- C2 5-55pF BANDSET (transistor radio variable)
- C3 6-80pF FINAL TUNING (old B.C. variable)
- L1 57 TURNS 1" DIA. MINI-DUCTOR
- L2 35 TURNS 1" DIA @ 321/INCH (P.V.C. pipe former)
- D1/D2 BC108 OR 2N2711

Courtesy LO-KEY. QRP CLUB. (3ADY)

REPEATER REPORT

86/09 17

17.

The repeater VK3RBS is now being tested at my QTH. It is presently running about 8 watts out-put to a "Slim Jim" about 18m high. It's coverage seems to be fairly good with strong signals being received from down the Gordon by-pass and from out at Ross creek. Please try to use the repeater as much as possible in the next few weeks so we can accurately gauge its performance. It is operating on Ch 6 (146.900/146.300).

Dick VK3VU

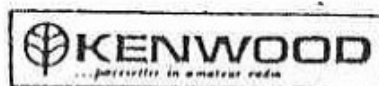
NEED TO GENERATE A WEAK SIGNAL ON 2 METRES?

If you need to generate a weak signal to tune up a convertor or receiver then try this. Connect your hand-held to a suitable dummy load and then wrap the load and the transceiver with kitchen tinfoil. You then tear a small hole in the tinfoil to vary the signal. Quite a weak signal can then be generated.

Dick VK3VU

WE HAVE WHAT YOU NEED AT..

WECAM
Communications
Sales & Service
(053)39 2808



YAESU

 **ICOM** and others

11 Malmshury Str. Wendouree 3355--

CALL US OR SEE BRIAN STARES, VK3 KQB

COAX, Rotator and L.T. Cable, Plugs and connectors, Transistors and IC's, Aerials and assorted parts always in stock. Call for prices and information.

EVERYTHING FROM A TO Z IN ELECTRONICS

86/09 18

....A SPECIAL THANKS.....

Recently, I sat for an upgrade from novice to fullcall, and much to my joy, I passed.

But as I sit and ponder the transition to full call, a number of things spring to mind. The one outstanding thing is, the support and help that the members have given. From books to study papers and heaps of moral support.

There is one in particular that stands out from the rest, and I think a true representative of what Amateur radio is all about. He was always there when needed for that tricky one, that question that just did not have an answer (or so I thought) and if you couldn't catch on he went to great pains to explain it another way so that you could grasp it. I have had his help from the time that I started to work for my novice call, and Bob (VK3BNC) I thank you very much, and I'm sure we could all take a feather from your cap.

Once again many many thanks, to all that helped make it possible,

Yours in fellowship,

Cliff Bilston VK3CCB.

FOR SALE

Siemens model 100 teletype machine.
Paper tape puncher and reader, line interface unit, some spares and service manual. \$80.
Paul Smith VK3XTV
B.H. 328484
A.H. 392311

WANTED

Icom IC202 2m SSB T/CVR.
Bob VK3BVS.

Medium duty rotator.
Ian VK3AXH.

DEADLINE

FOR NEXT MAGAZINE COPY IS
THURSDAY 23RD. OCTOBER.

(IF COPY IS NOT RECEIVED BY THEN, IT MISSES
OUT. DEFINATELY NO LATE STARTERS)

RON
VK3XOA.

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CW SPRINT

This is a first-ever contest here in VK. The object is to contact as many stations as possible during a designated 90 minutes on Saturday night, 15 November, on 80 metres only. You may contact any station in the world. Full details should be available in this month's AR magazine.

Now you don't have to be a high-speed op or have a fancy iambic keyer to join in. So, now is the time to dust off the old straight key or to readjust your bug. If your speed is very slow, don't worry. Just send QRS and the other operator will slow down. After all, he or she will want the point your contact will give. (Trust me, Leon.)

This is a new kind of contest for us in VK. Endurance and heaps of coffee play no role here. The contest will be short, sweet, and relaxed.

de Maggie
VK3CF1

Hear ye! Hear ye!

All of us here in the BARG wish to express our congratulations to Cliff (ex-VK3PAF) and Leon (ex-VK3NLR). Both have passed their AQCP Theory exams which they sat for last August. Cliff is now VK3CCB and Leon will soon be using a K call. And so we say: Hooray! Whoopee! Well done! Terrific! And we also say: Two metres will never be the same.

de Maggie VK3CF1

PREVENTING THE SIEZURE OF DIE-CAST BOX SCREWS

If you have ever tried to undo the screws of a die-cast box that has been exposed to the weather then you will be lucky if you did not break them off. To prevent this happening just apply a little "Denso Grease" to the screws before tightening up. This will then prevent the screws from siezing up.

Dick VK3VU

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CONTINUATION OF PACKET RADIO SERIES.....

The February '86 Bendigo convention saw a very good demonstration of V2 packet by the Melbourne group, complete with digital repeater set up on Mt. Macedon for the day, enabling contact to be made to several Melbourne home stations.

On H.F. One of the first long-distance contacts made was in May 1983, when a successful digital packet radio QSO was held between W3 IWI in Maryland and ZL1 AOX near Auckland on 28 Mhz. Both stations were using AX.25 and the TNC developed by the Tucson Amateur Packet Radio Group (TAPR). Since then, the activity on H.F. has increased greatly with hardly a day passing without someone announcing themselves as... ".....on packet for the first time".

The digipeating feature of packet opens up vast possibilities and some experiments have been conducted from Australia via New Zealand, Cook Islands, Hawaii to the east coast of U.S.A. thereby overcoming the problems that occur when there is poor propagation.

Operators of the Australian Third Party Traffic Net have found that it only needs a few minutes of band opening to pass a large number of messages to and from.

It was once envisaged that there would be packet repeaters in a chain from Sydney to Melbourne. Locations at Canberra, Albury, Euroa and then to Broadmeadows using existing hills where there are already amateur voice repeaters. So far there has been activity in Canberra and also a call sign allocated for Mt. Stanley. Both of these repeaters look like being of the re-generation type and will handle both types of protocol.

Further north in N. S. W. there are applications pending for the following areas: Canberra, Wollongong, Gosford, Newcastle, Port Macquarie, Tamworth, Coffs Harbour, and Lismore. The Sydney repeater is operational and there is also an application pending for Perth, with Brisbane to follow soon. These repeaters will be on the standard frequency of 147.575 unlike the Melbourne V2 repeater which uses the frequency usually reserved for simplex packet: 147.600 Mhz.

Those groups in Victoria who are showing interest in setting up repeaters will have to look closely at this question of which frequency to adopt as the Australian Amateur Packet Radio association has established a coordinated approach that, so it seems, some groups are unwilling to follow. In spite of the wonderful things your TNC is able to do, it cannot swing your frequency. Looks like we are in danger of repeating the fiasco this country has suffered for a hundred years with the railway gauges; each state ran off and did their own thing with no regard for the good of the nation as a whole.

It is to be hoped that, at this early stage in the evolution of packet radio that we won't repeat something similar to this example.

The adoption of two different systems (protocols) within the one country has already involved some repeater groups in needless expense and technical complication in order to be able to have their devices cater for both "languages".

The packet radio scene is changing rapidly, and as each new development takes place it becomes more obvious each time that all packet enthusiasts should aim for unity.

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It is unfortunate that both groups within Australia seem to be spending most of their efforts promoting, not packet radio per se, but their own favourite protocol. Once you can dodge the claims and counter claims, the choice of which protocol is most suitable for YOU is simple. Your choice should be based on your target area of activity. AX.25 would not be suitable if you wished to contact Canada or Melbourne, but would be the system to use for all other places, (see list of countries)

Let us now look at the hardware available; firstly the V2 equipment.

The Vancouver Amateur Digital Communications Group has recently announced the availability of the new revised VADCG Mk2 Terminal Node Controller. The Mk2 TNC is based on the original VADCG TNC which was produced in 1979 and includes some of the standard features such as 8085 CPU, 8273 HDLC and 8250 UART. It has remained at the same physical size to allow retrofit of the earlier Mk1 TNC units.

Some of the new features are 64 Kbytes of 2764/6264 ROM RAM configurations, allowing optional downline loading of TNC software, provision of battery backup of CMOS RAM, which enables storage of user dependent TNC parameters. The TNC also provides circuitry for on board switch mode power supply enabling operation from a 12 volt supply.

There is provision for use of an 8255 PIA for hardware function setting and can act as a second terminal port, along with the standard DB25 connectors, providing RS232/V.24 signalling to both terminal and modem ports.

The Mk2 TNC board and documentation can be ordered from

the VADCG for \$Canadian 50 plus \$Canadian 5 to cover postage and handling. The Intel 8273 HDLC chip can also be obtained from them for \$Canadian 50 plus \$Canadian 5 for postage from this address:-

V . A . D . C . G .
9 5 3 1 Odlin Road
Richmond, B . C . ,
CANADA, V6X 1E1

The Sydney Amateur Digital Communications Group will provide the software support for the VADCG Mk2 TNC, which includes the SADCG Master/Monitor software which provides a menu driven system for both Vancouver V2 and AX.25 protocols in 2764 EPROMS. NOTE- the AX.25 supplied from this source does not contain the digipeating feature.

In conjunction with the VADCG Mk2 TNC, the SADCG provides a 7910 Radio Modem printed circuit board. This modem uses the AMD 7910 world modem chip providing various Bell and CCITT AFSK modem frequencies. It interfaces to the TNC via a DB25 connector. The SADCG 7910 radio modem pcb and documentation is available for \$20 plus \$2 postage from:

S . A . D . C . G . ,
P . O . Box 231,
FRENCH'S FOREST,
N . S . W . 2086

Approximate building cost for the TNC is \$250 and for the modem - \$100. There is really no restriction as to what type of computer or terminal that may be used with the TNC, other than it must have an RS232 port and can send and receive ASCII. In Melbourne, Peter, VK3 AVE runs a bulletin board which may be accessed on the digital repeater located at Broadmeadows on a frequency of 147.600 Mhz. A host of information and updates is always available. Particularly useful is the assistance available to users of the VADCG hardware to help overcome the bugs that appear from time to time. There seems no reason to think that contact could not be made on H.F., and no doubt many V2 enthusiasts are working towards achieving this one day in the near future. Certainly, the 7910 modem that they supply looks like being ideal for H.F. work.

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BALLARAT
HAMVENTION
1986

Come and be part of the
fun

Trade displays

Competitions and

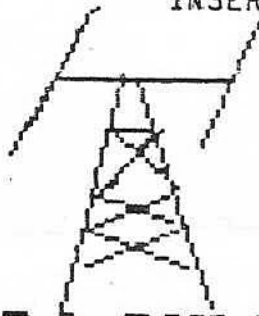
Many other activities

Sat 1ST Sun 2ND November

86/09 24A

INSERT TO B.A.R.C. NEWS

SEPT. 1986 ISSUE.



BALLARAT HAMVENTION.

1st to 2nd November, 1986.

OXFORD

P.O. BOX 216E, BALLARAT EAST, VIC., 3350.

The Ballarat Amateur Radio Group will be conducting the 1986 HAMVENTION during the weekend of November 1st and 2nd, 1986.

The venue will be the Sebastopol Football Club rooms located at the Marty Busch recreation reserve, 7km south of the centre of Ballarat. There will be a meal provided on the Saturday night, beginning at 7pm, at a cost of \$12.50 a head. There will be a bar service available during the evening.

We will have a guest speaker, who will talk on Amateur Satellites.

The Sunday venue will also be at the recreation reserve. A full and varied range of events for amateurs, their spouses and children will be provided. A lunch and afternoon tea will be provided at a cost of \$7.50 a head (children under 12 free).

Talk in facilities will be provided on :-

1. Repeater UK3RBA (146.750 MHz) and
2. 3.610 MHz SSB.

If you wish to attend the dinner on Saturday night and/or the Sunday lunch, then it is important to make your booking to the

HAMVENTION CONVENOR,
MURRAY FELSTEAD, UK3AAL.

P.O. BOX 216E,
BALLARAT EAST, 3350

no later than October 25th, 1986. There is a form provided below for your convenience.

If required, we can recommend several local caravan parks and motels.

**PLEASE MAKE YOUR
BOOKING TODAY !!!**

*** 1986 BALLARAT HAMVENTION ***

NAME..... CALLSIGN.....

ADDRESS.....

NUMBER ATTENDING SATURDAY DINNER :-

Adults..... Children.....

NUMBER ATTENDING SUNDAY LUNCH :-

Adults..... Children.....

86/09

24 B

1988 BALLARAT HAMVENTION.

*** PROGRAM ***

SATURDAY NOVEMBER 1ST.

11:00 HALL OPENS FOR THE SETTING UP OF TRADE DISPLAYS.
 15:00-18:00 REGISTER AT HALL, COLLECT MEAL TICKETS AND HAVE
 EYEBALLS.
 18:30 PRE-DINNER DRINKS.
 19:00 HAMVENTION DINNER, (SMORGASBORD) AT SEBASTOPOL
 FOOTBALL CLUB.

SUNDAY NOVEMBER 2ND.

08:30-12:00 REGISTER AT HALL AND COLLECT MEAL TICKETS.
 EVENT ONE
 09:30-09:40 2m SSB SCRAMBLE. MARSHALL ON 144.150 MHz.
 EVENT TWO
 09:45-09:55 2m FM SCRAMBLE. (146.450/146.500 & 146.550MHz).
 MARSHALL ON 146.500 MHz.
 EVENT THREE
 10:00-10:00 2m HANDHELD SCRAMBLE. MARSHALL ON 146.500 MHz.
 EVENT FOUR
 10:15-10:25 40m SCRAMBLE. MARSHALL ON 7.075 MHz.
 EVENT FIVE
 10:30-10:40 80m SCRAMBLE. MARSHALL ON 3.600MHz.
 EVENT SIX
 11:00-11:15 HIGH SPEED CW RECEIVING COMPETITION (1 MINUTE
 EACH AT 25,30,35 AND 40 WPM).
 EVENT SEVEN
 11:20 SNIFFER HUNT. FREQUENCY ABOUT 144MHz.
 11:30 SURPRISE! (ESPECIALLY FOR THE CHILDREN).
 12:00-13:30 LUNCH.
 EVENT EIGHT
 13:30 70 cm FOX HUNT. 439.000MHz.
 13:30 CHILDREN SATELLITE DRAWING.
 EVENT NINE
 14:05 2m FOX HUNT. 146.500MHz.
 14:30 CHILDREN'S BEEPER HUNT.
 EVENT TEN
 14:45 80m FOX HUNT. 3.585 MHz.
 15:00 ENTRIES CLOSE FOR HOME-BREW.
 15:15 JUDGING OF HOME-BREW.
 15:30 TROPHY AND PRIZES PRESENTATION.
 15:45 AFTERNOON TEA.

CHANNEL 3 AND 3.610 MHz WILL BE MONITORED DURING THE FOXHUNTS
 SHOULD YOU GET LOST!!